AP Statistics Reading Guide
Chapter 8

Name: _____

1. What is a residual? What does a positive residual tell us? What does a negative residual tell us?

2. The Least-Squares Regression Line is the line for which the _____ of the _____ _____ is the smallest.

3. The LSRL for data that has been standardized (converted to *z*-scores) is _____.

4. Given the LSRL: $\hat{final} = 27.6 + .56 midterm$
   a. What is the slope of the line?
   b. What is y-intercept?
   c. What does $\hat{final}$ represent?
   d. Suppose that you received an 80% on your midterm. What would you expect to get on your final?
   e. What if you received a 75% on your final (you had an 80% on your midterm)? What is your residual?

5. What three conditions need to be met in order to use a Linear Model?
   a. _____ Condition
   b. _____ Condition
   c. _____ Condition

6. A scatterplot of residuals is a good way to check the _____ Condition.

7. If a linear model is appropriate for the data, the residual plot will be BORING. It should not have any _____ features. It should stretch _____, with a about the same amount of _____ throughout. It should show no _____ or _____.

8. The squared correlation, R^2, gives the fraction of the data's variation accounted for by the _____.

9. An R^2 value of zero means _____

10. An R^2 value is written as a _____.

11. The R^2 value given an indication of how well the model predicts the ____-values.

12. If we are looking at a linear model showing the relationship between Midterm Exam Scores (predictor variable) and Final Exam Scores (response variable) and calculated R^2 to be equal to 85%, we could interpret that as meaning: "85% of the _____ in _____ can be accounted for by variation in _____."

13. True or False. The R^2 value determines if the linear model is appropriate for the data.

14. Please look over the Computer Printout for a Regression Analysis on page 188.